

Central Everglades Planning Project

Configuration Summary Sheet

^{MAY 13}
[Friday, ~~March 9~~, 2012 CEPP Workshop Interactive Exercise]

Arthur R. Marshall Foundation & Florida Environmental Institute, Inc., Configuration Summary

Box 1¹. **Configuration Name.** Establish a Unique and Descriptive Name of the Proposed Configuration.

RESPONSE: Marshall Plan, 1981: (Attached)²

Box 2. Author of the Configuration: Identify the name of the Author that developed the configuration during the exercise.

RESPONSE: John Arthur Marshall (JAM), taking the “design” from the original Marshall Plan, 1981 [See Footnote #2 below]. Caveat: This likely goes beyond CEPP Increment #1³. So be it.

VERBAL DEBRIEFING as part of the configuration exercise:

- A. Noted up front that this configuration represents the Arthur R. Marshall approach, and in all these exercises the ArtMarshall.org has a legacy obligating us to present the Art Marshall [total system] view;
- B. This likely goes beyond CEPP increment #1, however we need to keep our eye on the prize.
- C. This approach most closely adheres to CERP Table 5-1 goals and objectives, pointing to the CERP Table 5-1 Goals and objectives posted on the B-1 workshop walls, and noted in Box 4, below, and appended at the end of this input.
- D. Hypothesis: Approach meets needs of nearly 2 million acre feet of clean water south as noted in Hypothesis H1 below.
- E. Land not owned in white area of configuration exercise map would have to be purchased and re-vegetated.
- F. Later Comment on Storage-Storage-Storage plan: No deep water storage is needed, as dynamic storage and sheet flow as outlined in CERP Section 2.3.1 provides the needed 2 million acre feet of clean water south.
- G. Later Comment on deep v. shallow storage, and ASR: Reduced loss of ET is not a selling point for deep water storage/ASR. ET Drives the Water Cycle as noted in the Water Cycle Poster on the Table in the B-1 Lobby, also posted on the wall during the March 9 configuration exercise; Per the FL Water Atlas, Rainfall = 1.25 ET by extrapolation of the total ET/Rainfall data in FL.

¹ The written requirement was to pencil in the Boxes with written answers. Pencils were provided. This is a reproduction of the pencil entries with some amplification by footnotes, lettering, and [brackets].

² AKA “For the Future of Florida, Repair the Everglades” published by Marjory Stoneman Douglas; the attachment included the four page Marshall Plan, and the six page amplification presented to the SFWMD, June 11, 1981. We view this legacy as the CERP “classic case”.

³ In this context, CEPP increment #1 goals and objectives might be viewed as CERP(+) interim goals and objectives, the (+) indicating the reinforcements of CEPP adaptive management.

Box 3. Configuration's General Description. This description should be able to convey the general aspects, elements and general location of the management measures in this configuration.

RESPONSE:

- A. Restore sheet flow to the greatest extent possible from Lake Okeechobee to WCA-3⁴, between the Miami and North New River Canal, using the compartments A-1/A-2, The Holey Land – Rotenberger – Talisman land and STA [Stormwater Treatment Area] 3 and 4.⁵
- B. Re-vegetate to the max extent possible, land available between Lake O, Rotenberger, A-1/A-2; include the pond apple forest and sawgrass plains.

Box 4. Management Measures⁶: List the management measures used in the configuration (Deep Storage, Shallow storage, STA, Restored wetland, ASR [Aquifer Storage & Recovery]).

RESPONSE:

- Total Spatial Extent (acres) of natural areas restored or enhanced/preserved
- Type of Habitat category restored
- Functional Quality – Water Quality/Timing, quantity, quality restored.

Box 5. How Water flows through the configuration: This description should identify the travel route of the water that the configuration will be managing. Identify where the water is coming from and where it goes. The Author should be able to generally describe how the water gets from the originating water source (for example Lake O) to the final destination of the water.

RESPONSE:

Same as 1981 Marshall Plan; see attached: "For the Future of Florida – Repair the Everglades".

Note: This is/was the same flow-path as USACE [1994 Recon Study] Plan 6.

[Water would flow from Lake O to WCA-3 between the Miami and North New River Canals via acquired lands and lands presently owned]

Box 6. Objectives: Identify and prioritize (rank) the specific CEPP Objectives that the configuration is intended to meet (Use the list of objectives as needed).

RESPONSE:

- Restored, re-vegetated flow way cleans adequate amount of H2O to meet down-stream demands of ~2 million acre-feet/year.
- Significant increase in historic habitat acreage lets nature do the work.

⁴ This sheet-flow path described in Box 3 was a contraction of Art Marshall's total system vision classic case published in the Marshall Plan: Effective Everglades Repair requires restoration of sheet flow to the greatest possible extent from the Kissimmee Lakes to Florida Bay.

⁵ Sheet-flow path as defined here follows the same path as proposed in the Marshall Plan, also proposed as Plan 6 in the 1994 USACE Recon Study, and previously proposed in 1993 by the Science Subgroup, predecessor of the current Task Force Science Coordination Group.

⁶ In CERP/CEPP speak, management measures are management goals, objectives, targets [GOT]; JAM's emphasis on calling for focus on CERP Table 5-1 Goals and Objectives applies; also Management or performance benefits in terms of SSS, to be compared with costs.

[The approach outlined would meet all CERP Table 5-1 Goals & Objectives, listed in the CERP Yellow Book, page 5-21, appended below.⁷]

Box 7. Anticipated Benefits General Description: Identify why the Author chose the features in the configuration. List, prioritize and provide a general description of any benefits from the Proposed Configuration.

RESPONSE:

- Benefits described in 1981 Marshall Plan (4 pages) and taken to the SFWMD, June 11, 1981 (Hard copy provided at the March 9, 2012).
- Ecosystem Services Evaluation will prove [the ecologic and economic] benefits of Marshall Plan alternative.
- Post-configuration summary comments:
 - Benefits of fully restoring the natural system is that it maximizes performance at least cost, long term, i.e., the classic case is the optimal case.
 - Per the Costanza Synthesis [google << Nature 387 >>], the value of a functional wetland restored is calculated as \$10,913 per acre per year (2012 dollars).
 - As calculated using River of Grass workshop data, benefit-to-cost ratios (B:C) ranges from 6:1 to 26:1. B:C = 26:1 was achieved by a professionally developed design that maximized dynamic storage and sheet-flow and avoided use of deep water reservoirs.
 - To achieve this level of B:C more land will be needed between Lake O and land presently owned.

Box 8. Operating Assumptions General Description: List anything specifically that the Author wants relative to the operation of the configuration. Examples might be operational changes within the confines of the LO [Lake O] Schedule to maximize improvements to water supply or the environment, or both; specific high and low levels for the Lake O; Maximize pulse discharges or modify timing to natural system; manage project features wet or dry.

RESPONSE:

- Let gravity flow prevail when Lake is say > [greater than] 13 feet.⁸
- Reduce dike breach risk
- Make limited use of ASR to accomplish keeping wetlands wet, in the dry season.
- Deep water reservoirs are not needed in this configuration, per Hypothesis H1
- H1: USACE Plan 6 flow rating of 6660 CFS (cubic feet per second) for 5.5 months, and 3330 CFS for 3 months provides water quantity demand, given H2, Box 9. This would mimic natural historic flow, which included Lake O overflow south several months after the rainy season.

⁷ Adaptive Management protocols defined by the 2011 SFWMD Adaptive Management Integration Guide, require a serious look at CERP Yellow Book Goals & objectives. As the CEPP has been defined and is de facto a CERP adaptive management program based on new information (wetter Everglades), a requirement of the CEPP process is to give close consideration to CERP Table 5-1 goals & objectives.

⁸ Current Contour Maps, and/or a transect would confirm actual potential gravity flow as a function of Lake level, pooling in areas of subsidence, and vegetative resistance.

Box 9. Other Key Elements: List the main considerations that have not been mentioned elsewhere on this form. Examples may include water supply in Lake O Service Areas [LOSA]; deliver all available water to FL Bay; Recreational opportunities; etc.

RESPONSE:

- A. Given H1: Marshall Plan/Plan 6 provides CEPP water quantity to southern Everglades/FL Bay;
- B. Nutrient uptake of historic pond apple forest [South of Lake O]. Since Lake was estimated to be about [Phosphorous] $P = 40$ ppb [parts per billion] and water in the sawgrass plains was $P \sim 10$ ppb (+/-), the pond apple forest may be [is] a needed addition [to CEPP consideration]
- C. H2: 4:1 P Reduction ratio is [nearly] same as STA's achievement.
- D. H2 Question: Can Nature do it better?
- E. Use Kissimmee restoration as an example to follow.
- F. H3: Increased surface water area will maintain "rain machine" to restore a wetter Everglades.
[Footnote: A wetter Everglades is a major premise for the CEPP process adaptive management approach]

Appendix:

CERP Final Feasibility Report and PEIS April 1999, AKA ~~The Yellow Book~~; Page 5-21⁹

TABLE 5-1 GOALS & OBJECTIVES FOR THE C&SF RESTUDY

Goal: Enhance Ecologic Values; Objectives:

- Increase the total spatial extent of natural areas
- Improve habitat and functional quality
- Improve native plant & animal species abundance & diversity

Goal: Enhance Economic Values And Social Well Being; Objectives

- Increase availability of fresh water (agricultural/municipal & industrial)
- Reduce flood damages (agricultural/urban)
- Provide recreational and navigation opportunities
- Protect cultural and archeological resources and values

⁹ A Major reason to fully focus on the overarching goals & objectives: It is not enough to repeatedly say that: *In Florida, the environment is the economy*. Government agencies, especially CERP(+)/CEPP implementors must move in that direction, with CERP Table 5-1 as the central organizing theme, to wit: Achievement of Ecological Goals & Objectives result in enhancing Economic Values and Social Well-being goals and objectives. Note that the reverse is not much the case.

FOR THE FUTURE OF FLORIDA REPAIR THE EVERGLADES+

SPRING 1981

The Friends of the Everglades in concert with the Environmental Confederation of Southwest Florida (ECOSWF), Everglades Protection Association, Florida Audubon Society, Florida Conservation Foundation (ENFO), Florida Defenders of the Environment, Florida Division of the Izask Walton League, Florida League of Anglers, Florida Chapter of the Sierra Club, Florida Wildlife Federation, Organized Fishermen of Florida (OFF), the Southeastern Fisheries Association, and many local organizations petition all appropriate officials and agencies of government to commence repair of the Everglades system.

Effective repair requires restoration of sheet flow to the greatest possible extent from the Kissimmee Lakes to Florida Bay. Its purpose is to recover an array of vital natural resources now disappearing from the region — resources of extreme importance to present and future Floridians and to the nation at large. The present water management regime continues to diminish or degrade:

- drinking water supplies
- organic soils (peat and muck) throughout the system
- freshwater fisheries
- marine fisheries of the St. Lucie and Caloosa-hatchee Estuaries and Florida Bay
- waters of suitable quality for fish and wildlife
- wetlands
- Everglades National Park

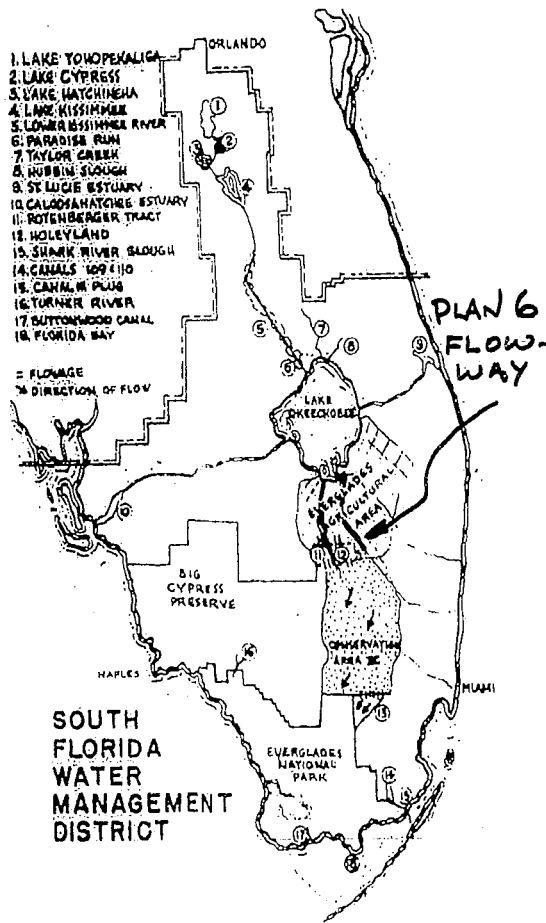
Reparation of the system requires:

- + resolving the pollution problems of Lake Tohopekaliga, Taylor Creek, Nubbin Slough, the Everglades agricultural area, and Lake Okeechobee
- + refluating Lakes Cypress, Hatchineha, and Kissimmee to the greatest possible extent
- + dechannelizing the lower Kissimmee River and restoring Paradise Run
- + restoring sheet flow in the Holey Land and Rotenberger Tracts, Conservation Area Three, and Everglades National Park
- + reestablishing sheet flow connections between Area Three and the Big Cypress Preserve to the west and the Shark River Slough to the south
- + refilling that portion of Canal 111 which lies under US Highway 1 and the existing portions of Canals 109 and 110
- + restoring the Turner River in the Big Cypress Fresh Water Preserve
- + plugging the Buttonwood Canal in Everglades National Park as authorized and funded by Congress

The Florida Legislature has correctly foreseen the need to repair the Everglades system by authorizing the dechannelization of the lower Kissimmee River. By its Act of 1976, the Legislature anticipated that restoration of the lower Kissimmee River would enhance water conservation, ground water supplies, wetland vegetation, energy conservation, conversion of nutrients (nitrogen and phosphorus) to peat and muck, low energy ranching, fresh

water fisheries, and wildlife. Restoration of the lower Kissimmee River together with refluating of Lakes Hatchineha, Cypress, and Kissimmee would in addition provide the start of a long slow flow of the water in the system — water which could pass through Lake Okeecho-

(Continued on page 2)



+ Also known as "The Marshall Plan"

